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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/982,491	10/18/2001	Derek John Hummerston	G0631/7020 SJH	7475

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EXAMINER

WILLIAMS, HOWARD L

ART UNIT	PAPER NUMBER
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2819

DATE MAILED: 11/28/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/982,491

Applicant(s)

HUMMERSTON ET AL.

Examiner

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 January 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. §§ 119 and 120**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

Claim 19 is objected to because of the following informalities: In line 3 the claim uses the phrase "latch mode control signal"; the last four words of the claim recite "the latch control signal." Are these the same signal? If so then it is unclear how the claimed circuit functions irrespective of the control signal. Appropriate correction is required. Claim 20 provides that only selected latches "participate in the shift process." This phrasing seems a poor choice in wording. Even in a pass through mode the latches still form a connection in the chain even if they are not selected and do not participate in providing an output from the sequencer.

Figure 3 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 6 recites the limitation "the multiplexer" in line 2. There is insufficient antecedent basis for this limitation in the claim.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-9 are rejected under 35 U.S.C. 102(b) as anticipated by Imakura (US 5,619,201). Digressing for a moment it is noted that claim 1 calls for any one or more

channels to be selected in sequence responsive to a user command with unselected channels being skipped. Multiplexing plural inputs to an analog-to-digital converter is an old technique one known method of control (see discussion of background art) is to supply a specific multiplexer channel address and decode that to have the multiplexer select the corresponding channel. Such an arrangement selects and converts one specific channel and skips the remaining channels. The claim is astonishingly broad.

Imakura discloses an analog-to-digital converter system having a multiplexer (8). Channel selection control is provided by the ADC control circuit (2) as programmed by the scan selection flag register (9) and down counter (13). The down counter controls the number of passes through a chosen sequence of channels selected by the scan flag register. The scan flag register (9) as shown in conjunction with figure 5 holds a selection word where the number of bits in the control word correspond to the number of channels. The respective bits of the scan selection word are individually set to mark the channels to be selected in a conversion sequence.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 10-15 and 17 are rejected under 35 U.S.C. 103(a) as unpatentable over Imakura (US 5,619,201) in view of Crocker et al (US 3,083,907) and Jex et al. (US 5,598,113) and admitted prior art figure 3. Imakura does not disclose the contents of the A/D control circuit which provides the operational control of the ADC responsive to

the channel sequence provided by scan flag selection. Although the discussion does seem rather suggestive of a shift counter. Crocker et al. discloses a ring or shift counter with a programmable selection of the length or number of stages as determined by a control bit of the "skipping control signal source." The skipping control bit causes specific stage(s) of the register (A,B,C, ... G) to be bypassed. In column 6 lines 3-27 Crocker discloses that the arrangement of skipped stages may be configured to provide many different configurations where essentially each stage of the register chain would have its own skip circuit and corresponding control bit. Crocker discloses that it would be very useful to have a ring circuit able to skip over certain counting elements. Crocker's disclosed "Eccles-Jordan bistable circuit" also inherent has multiple logic elements. Jex et al. (US 5,598,113) discloses a programmable length ring circuit (110; fig. 4) to provide multiplexer (60; fig. 4) selection control. It would have been obvious to use a programmable ring counter such as disclosed by Crocker et al. as the channel selection control in Imakura as suggested by Jex et al. because the use of a ring counter to select one among n-channels would be achieved with a simple circuit and reduced element count since a decoder would not be required.

Claim 16 is rejected under 35 U.S.C. 103(a) as unpatentable over Imakura (US 5,619,201) in view of Crocker et al (US 3,083,907) and Jex et al. (US 5,598,113) and further in view of Widener (US 5,004,933). Crocker discloses a skipping arrangement to bypass certain stages of the register chain such that unselected stages do not act as a pass through buffer in the chain. Widener discloses a phase selectable flip-flop where a pass through mode ("Mode" "en2") controls whether the first stage provides a latching

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mode or pass mode to the second stage. It would have been obvious to modify the Crocker shift counter with the Widener mode controllable latches since it would provide a reduction in circuitry thereby enabling more compact implementation of the programmable ring counter.

Claims 18-23 are rejected under 35 U.S.C. 102(b) as anticipated by Crocker et al (US 3,083,907). These claims with multiplexer and ADC removed are readable directly upon Crocker et al. alone which effectively bypasses the selected stages in the shift chain.

Claims 24 is rejected under 35 U.S.C. 103(a) as unpatentable over Crocker et al (US 3,083,907) in view of admitted prior art figure 3. Crocker et al. doesn't disclose gating the output line responsive to the skip control signal. However doing so as disclosed in prior art figure 3 would have been obvious to provide a layer of protective redundancy against an undesired stages providing an output.

Any inquiry concerning this communication should be directed to Howard L. Williams at telephone number 703-308-1679. Sometime shortly after January 1, 2004, the examiner's new telephone number will be 571.272.1815. The Patent and Trademark Office has a new central facsimile number for application specific correspondence intended for entry, it is 703-872-9306.

Date  
Voice 703-308-1679  
571.272.1815 (after Jan.1)

  
Howard L. Williams  
Primary Examiner  
Art Unit 2819